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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,688	06/12/2001	Jae-Yoel Kim	678-693 (P9800)	4991

28249 7590 01/31/2007  
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UNIONDALE, NY 11553

EXAMINER
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TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
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2133

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/31/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/879,688

Applicant(s)

KIM ET AL.

Examiner

Joseph D. Torres

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8,9,19,20,25 and 29-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8,9,19,20,25,29-31,33,34,36 and 38-44 is/are rejected.
- 7) ☒ Claim(s) 32,35 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. In view of the amendment filed 12/01/2006, the examiner withdraws all prior rejections under 35 USC § 112.

### ***Response to Arguments***

2. Applicant's arguments filed 12/01/2006 have been fully considered but they are not persuasive.

The Applicant contends, "The Examiner states that the prior arguments to the claims have been considered but are moot in view of the new ground(s) of rejection. The Examiner applies this statement to at least independent Claims 8 and 19. The Examiner then recites, verbatim, the rejection contained in the prior Office Action. Clarification of this inconsistency is respectfully requested".

The Examiner would like to point out that the only argument concerning claims 8 and 19 in the last paragraph at the bottom of page 10 and ending at the top of page 11 in the Applicant's responses filed 05/15/2006 are fully addressed on page 4 in the Examiner's Office action filed 06/29/2006.

In the Interview subsequent to the Final filed 06/29/2006, only arguments concerning specific puncturing patterns not present in claims 8 and 19 were presented.

Then Examiner refers the Applicant to the Examiner's Office action filed 06/29/2006.

The Applicant contends (2<sup>nd</sup> paragraph page 12 of the Applicant's response), "Block coding is defined by a unique sequence, puncturing pattern, etc. in accordance with a coding length. That is, when a coding length is changed, a completely different code is required by a channel that requires changing the entire coding structure".

The Examiner asserts that, first of all, as per the language of claim 8 and 19, one of ordinary skill in the art at the time the invention was made would know how to read Table 7-1 on page 154 of Wicker to implement any of the orthogonal codes in column 6 of Table 7-1. Page 152 of Wicker teaches that all Reed-Muller codes are generated from orthogonal sequences in the same way, that is, a 64-bit Reed-Muller code is not a "completely different code". A 64-bit Reed-Muller code is still a Reed-Muller code and is generated using orthogonal sequences just like any other Reed-Muller code regardless of length. And second of all, the Examiner has rejected claims 8 and 19 by providing evidence in the Prior Art cited in the grounds of rejection for each and every limitation in claims 8 and 19. The Applicant ignores the evidence provided by the Examiner and fails to point out any errors in the rejection of the limitations in the claim.

The Applicant contends (last paragraph page 12 of the Applicant's response), "MPEP §2145.X.B clearly states that 'obvious to try' is not the standard under §103".

The Examiner asserts that nowhere does the Examiner use the term 'obvious to try' in the rejection of claims 9, 20, 25, 29-31, 33, 34, 36 and 38 nor does the Prior Art teach substantially uniform puncturing patterns as a new technology, but instead teaches

Art Unit: 2133

substantially uniform puncturing patterns as well-known in the prior art for providing optimized puncturing (col. 1, line 36-40 and col. 9, lines 24-26 in Tong explicitly provide motivation citing that substantially uniform puncturing optimizes the punctured code).

The standard for §103 rejections is provided by the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The rejection recites the limitations of claims 9 and 20 taught in Citation #4 and Wicker at the top of page 7 in the Office action filed 08/28/2006 (Step 1 of the factual inquiries set forth in *Graham v. John Deere Co.*).

Page 7 in the Office action filed 08/28/2006 explicitly recites the limitations not taught in Citation #4 and Wicker (Step 2 of the factual inquiries set forth in *Graham v. John Deere Co.*).

The court has held that an invention may be held to have been obvious without a specific finding of a particular level of skill where the prior art itself reflects an appropriate level. *Chore-Time Equipment, Inc. v. Cumberland Corp.*, 713 F.2d 774, 218 USPQ 673 (Fed. Cir. 1983). See also *Okajima v. Bourdeau*, 261 F.3d 1350, 1355, 59 USPQ2d 1795, 1797 (Fed. Cir. 2001). In the current rejection, Tong is an analogous

Art Unit: 2133

art, hence; the Tong patent itself reflects an appropriate level (Step 3 of the factual inquiries set forth in *Graham v. John Deere Co.*).

Step 4 of the factual inquiries set forth in *Graham v. John Deere Co.* can be summarized as follows: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings and second, there must be a reasonable expectation of success.

Col. 1, line 36-40 and col. 9, lines 24-26 in Tong explicitly provide motivation citing that substantially uniform puncturing optimizes the punctured code and even the Applicant agrees that the teachings in Citation #4 and Wicker encompass all puncturing patterns including the substantially uniform puncturing patterns of Tong since in the second paragraph on page 10 of the Applicant's response filed 05/15/2006 suggests that Citation #4 and Wicker encompass all puncturing patterns associated with the formula in the second paragraph on page 10, which clearly indicates a reasonable expectation of success.

The Applicant contends, "with respect to determining a puncturing pattern, the total number of combinations to choose from is given by"... "which produces a total number of possible combinations of **488,526,937,079,580**. The amount of experimentation and analysis needed to determine optimal puncturing patterns in and of itself removes the claim element from any unsupported obviousness rejection".

Art Unit: 2133

The Examiner asserts that the puncturing patterns presented in claims 9, 20, 25, 29-31, 33, 34, 36 and 38 are substantially uniform puncturing patterns and there are not 488,526,937,079,580 substantially uniform puncturing patterns. As per the experimentation and analysis, Tong teaches that the experimentation and analysis to determining substantially uniform puncturing optimizes the punctured code is prior art (col. 1, line 36-40 and col. 9, lines 24-26 in Tong).

The Examiner disagrees with the applicant and maintains all rejections of claims 8,9,19,20,25,29-31,33,34,36 and 38-44. All amendments and arguments by the applicant have been considered. It is the Examiner's conclusion that claims 8,9,19,20,25,29-31,33,34,36 and 38-44 are not patentably distinct or non-obvious over the prior art of record in view of the references, Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999) in view of Citation #7 ("Harmonization impact on TFCI and New Optimal Coding for extended TFCI with Almost no Complexity increase", TSGR#6(99)970, July 13-16, 1999) in further view of Claydon; Anthony Peter John et al. (US 5742622 A, hereafter referred to as Claydon) in view of Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong) as applied in the last office action, filed 08/28/2006. Therefore, the rejection is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999) in view of Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155). See the Non-Final Action filed 08/28/2006 for detailed action of prior rejections.
4. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999) and Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155) in view of Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong).

Art Unit: 2133

See the Non-Final Action filed 08/28/2006 for detailed action of prior rejections.

5. Claims 25, 29, 36 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999) and Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155) in view of Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong) in further view of Citation #7 ("Harmonization impact on TFCI and New Optimal Coding for extended TFCI with Almost no Complexity increase", TSGR#6(99)970, July 13-16, 1999).

See the Non-Final Action filed 08/28/2006 for detailed action of prior rejections.

6. Claims 30, 31, 33, 34 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Citation #4 ("Text proposal regarding TFCI coding for FDD", TSGR1#7(99)D69, August 30-September 3, 1999), Wicker (Stephen B. Wicker, Error Control Systems for Digital Communication and Storage, Prentice-Hall, 1996, pages 149-155) and Tong; Wen et al. (US 6744744 B1, hereafter referred to as Tong) in view of Citation #7 ("Harmonization impact on TFCI and New Optimal Coding for extended TFCI with Almost no Complexity increase", TSGR#6(99)970, July 13-16, 1999).

See the Non-Final Action filed 08/28/2006 for detailed action of prior rejections.

***Allowable Subject Matter***

7. Claims 32, 35 and 37 objected to as being dependent upon respective rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the respective base claims and any intervening claims.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

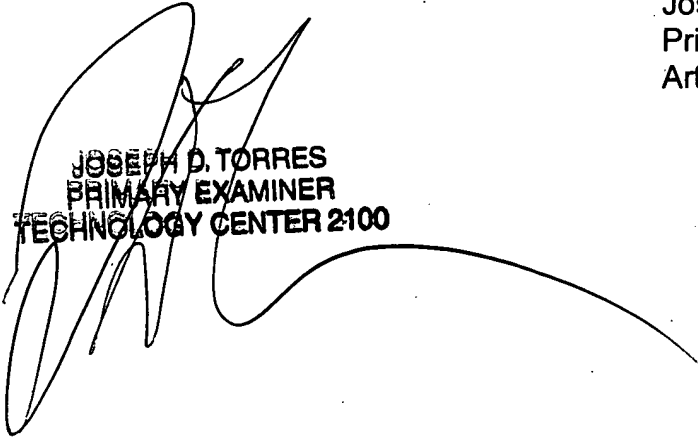
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

Art Unit: 2133

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph D. Torres, PhD  
Primary Examiner  
Art Unit 2133



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